REMARKS

Claims 47-62 are pending in the present application. Claims 47-62 have been rejected under § 103 as being unpatentable over Koinuma 4,451,802 (Koinuma) in view of King 6,300,827 (King), Engbretson 5,311,150 (Engbretson), Dudley et al. 5,144,133 (Dudley) and Lu et al. 6,009,023 (Lu).

As mentioned above, claims 47-62 have been rejected under § 103 as being unpatentable over Koinuma in view of King, Engbretson, Dudley and Lu. The Examiner has taken the position that it would have been obvious to combine the teachings of these references, and that such a combination makes the claims unpatentable. In the Office Action, it is alleged that it would be obvious to one of ordinary skill in the art to replace the load of Koinuma with a wireless transmission/reception system taught by King. The Office Action also alleges that it would have been obvious to substitute the FET structure of Engbretson for the bipolar elements of Koinuma. The Office Action also alleges that it would have been obvious to replace the amplifier of Koinuma with a CMOS based unit. Finally, the Office Action alleges that it would have been obvious to make the oxide of the output stage thicker than the lower voltage input stage.

Claim 47 recites a dual gate oxide CMOS RF power amplifier for a wireless transmission system including "RF power amplifier input stage circuitry including devices with a first gate oxide thickness," "RF power amplifier output stage circuitry having devices with a second gate oxide thickness," and "wherein the first gate oxide thickness is less than the second gate oxide thickness, and wherein the first gate oxide thickness is related to desired breakdown voltage levels of devices in the input stage circuitry and the second gate oxide thickness is related to desired breakdown voltage levels of devices in the output stage circuitry."

Claim 52 recites a cellular telephone apparatus including "a transceiver for transmitting and receiving signals," "a complementary metal oxide semiconductor (CMOS) RF power amplifier coupled to the transceiver, the RF power amplifier having input stage circuitry including devices with a first gate oxide thickness and output stage circuitry having devices with a second gate oxide thickness, wherein the first gate oxide thickness is less than the second gate oxide thickness, and wherein the first gate oxide thickness is related to desired breakdown voltage levels of devices in the input stage circuitry and the second gate oxide thickness is related to desired breakdown voltage levels of devices in the output stage circuitry," and "an antenna coupled to the RF power amplifier and the transceiver for transmitting and receiving signals."

Claim 57 recites a method of providing a CMOS RF power amplifier for a wireless transmission system including "providing an input stage including one or more devices having a first gate oxide thickness," "providing an output stage including a plurality of switching devices having a second gate oxide thickness," and "selecting the thickness of the first and second gate oxides such that the second gate oxide thickness is greater than the first gate oxide thickness, wherein the first gate oxide thickness is selected based on desired breakdown voltage levels of devices in the input stage and the second gate oxide thickness is selected based on desired breakdown voltage levels of devices in the output stage."

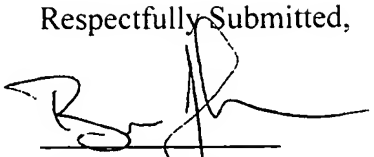
If one skilled in the art were to attempt to design the power amplifier of Koinuma to be used in the wireless transmission/reception system of King, using CMOS technology, as in Dudley, applicants assert that it would not be obvious to combine such a design with the teachings of Lu. Designing an RF power amplifier using CMOS technology presents large challenges. For example, it is very difficult to meet performance goals when designing an RF power amplifier in CMOS. Although the technology allowing dual gate oxide devices has been

available for years, Applicants believe that no one else has successfully designed an RF power amplifier in CMOS using dual gate oxide technology. In RF designs such as this, it is typically desired to use the fastest and most efficient devices possible on an integrated circuit. With respect to the thickness of gate oxide devices, thinner gate oxide devices will typically perform better than thicker gate oxide devices. This would tend to make a designer use the smallest gate oxide thickness available (since thin gate oxide devices are typically faster and more efficient). While trying to increase performance and efficiency is such a design, it would be counter intuitive to also use larger gate oxide thicknesses in an RF power amplifier, which would tend to lower performance and efficiency. Therefore, Applicants believe that it would not be obvious for one skilled in the art to combine the teachings of Lu with the other references, since using thicker gate oxide devices in the combination would appear to decrease the performance of the RF power amplifier.

It is respectfully submitted that all claims are patentable over the prior art. It is further more respectfully submitted that all other matters have been addressed and remedied and that the application is in form for allowance. Should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Bruce A. Johnson, Applicants' Attorney at 512-301-9900 so that such issues may be resolved as expeditiously as possible. Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 to deposit

account number 50-3864 (Johnson & Associates).

Respectfully Submitted,



3/9/09
Date

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